DOCUMENT RESUME

ED 227 753 HE 015 992

AUTHOR	Dickmeyer, Nathan
TITLE	Financial Conditions of Colleges and Universities.
INSTITUTION	American Council on Education, Washington, D.C.; National Association of Coll. and Univ. Business Officers, Washington, D.C.
SPONS AGENCY	Department of Education, Washington, DC.
REPORT NO	ISBN-0-915164-17-5
PUB DATE	83
CONTRACT	300-79-0776
NOTE	73p.
AVAILABLE FROM	National Association of College and University Business Officers, One Dupont Circle, Suite 510, Washington, DC 20036.
PUB TYPE	Reports - Research/Technical (143)
EDRS PRICE	MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	*Educational Finance; Enrollment Trends; Expenditure Per Student; Financial Policy; *Financial Problems; Government School Relationship; *Higher Education; Income; *Institutional Evaluation; Needs Assessment; Private Colleges; *Public Policy; Resource Allocation; State Colleges
IDENTIFIERS	*Department of Education

ABSTRACT

Indicators of the financial condition of colleges and universities were compiled to assist the Department of Education in policy decisions, based on 1975-1978 institutional data, and site visits to colleges were undertaken. Findings include the following: (1) it is possible to monitor institutional financial conditions; (2) financial difficulty is spread unevenly among independent institutions; (3) public institutions appear to have become less financially flexible; (4) no major crises were evident in the financial condition of the 37 surveyed institutions; and (5) current financial conditions could be radically altered by precipitous enrollment increases/declines and major federal/state student financial aid policy changes. Basic concepts of measuring institutional financial condition were assessed, and it was found that indicators of stress, response, or system condition are useful in assessing the impact of environmental changes. The site visits focused on stresses and responses in the areas of marketing, financial problems, academic issues, and the physical capital issue. Three critical indicators selected for analysis are as follows: sorting public colleges by instructional budget support to students; sorting private colleges by level of financial reserves; and enrollment levels. A glossary is appended. (SW)

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financial conditions of colleges and universities

Nathan Dickmeyer

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american council on education

national association of college and university business officers

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College and University Business Officers
One Dupont Circle
Washington, DC 20036

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Printed in the United States of America
Edited by David W. Jacobson

Library of Congress Cataloging in Publication Data

Dickmeyer, Nathan.
Financial conditions of colleges and universities.

Bibliography: p.
1. Universities and colleges—United States—
Finance. I. American Council on Education.
II. National Association of College and University
Business Officers. III. Title.
LB2342.D5 1983 379.1'214'0973 82-18839
ISBN 0-915164-17-5

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This report is an abridgment of the final report submitted to the U.S. Department of Education. Chapters containing a discussion of the national goals of higher education, an analysis of various financial indicators by type of institution, and the individual site visit abstracts have been omitted here. The full project was sponsored by the Office of Program Evaluation of the U.S. Department of Education and was funded with federal funds from the department under contract number 300-79-0776. The contents of this publication do not necessarily reflect the views or policies of the U.S. Department of Education nor does mention of organizations imply endorsement by the U.S. government.

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Preface and Acknowledgments

This project grew from the Annapolis Conferences on Financial Measures begun in 1977. Those conferences, jointly sponsored by the American Council on Education (ACE), the National Association of College and University Business Officers (NACUBO), and the National Center for Education Statistics (NCES), were organized by Carol Frances and Sharon Coldren of ACE and D. F. Finn of NACUBO.

In the early conferences, Salvatore Corrallo and James Maxwell of the U.S. Department of Education provided advice and helped to clarify issues.

To guide the effort, a panel of higher education practitioners was assembled. Panel members, whose names follow, met many times during the project:

Brage Golding, president, Kent State University
William T. Haywood, vice president for business and finance, Vanderbilt University
B. A. Little, director, Motor Management Improvement Program
Robert McCabe, president, Miami-Dade Community College
Mary Louise Petersen, president, Iowa State Board of Regents
John W. Pocock, chairman of the board, The College of Wooster

The director of the project was Nathan Dickmeyer, formerly with the American Council on Education and now vice president for administration at The Monterey Institute of International Studies, Monterey, California. He managed the project, planned and carried out the analysis, conducted one-third of the site visits, and authored most of the chapters.

Also to be acknowledged are Stephen D. Campbell and Laurel J. Radow of NACUBO. As associate project director, Mr. Campbell conducted many of the site visits and wrote much of chapter 3. Ms. Radow, as project analyst, was responsible for the preliminary research analysis of educational markets and participated in several of the site visits. James A. Hyatt of NACUBO assisted in the preliminary site visits and conducted one-third of the actual site visits.

Appreciation is extended to Kevin J. Gilmartin of American Institutes for Research (AIR) and Frank J. Atelsek and Irene I. Gomberg of ACE. Mr. Gilmartin provided data from AIR's project on institutional viability and

distress. The report, "Development of Indicators of the Viability of Higher Education Institutions," was prepared as part of the contract of the U.S. Department of Education's Statistical Analysis Group in Education (SAGE). Their data assisted in the analysis phase of the project. Mr. Gilmartin and his colleagues, with diverse research backgrounds and views toward institutional health, checked the bias of any narrow perspective.

Frank Atelsek and Irene Gomberg authored Trends in Financial Indicators of Colleges and Universities, Higher Education Panel (HEP) Report No. 49. Their survey collected financial and other data not otherwise available, and the report documented the trends observed. The inclusion of selected information from the HEP survey augmented and strengthened the analysis phase of this project.

In addition, numerous consultants and ACE and NACUBO staff have read drafts, offered suggestions and support, or assisted in the data integration and analysis. Those individuals (and their institutional affiliation at the time they assisted) include:

George B. Baughman, The Ohio State University
Norman Brandt, National Center for Education Statistics
Roberta Cable, Sacred Heart University
Bernard Greene, American Council on Education
Alice Hertz, American Council on Education
Geoffrey C. Hughes, National Association of College and University Business Officers
K. Scott Hughes, Peat, Marwick, Mitchell & Co.
Paula Knepper, American Council on Education
Marilyn McCoy, University of Colorado at Boulder
Paul Mertins, National Center for Education Statistics
Van T. Pham, American Council on Education
Jackson Stenner, NTS Research Corporation
Judith Stich, Corporation for Public Broadcasting
Michael Smith, American Council on Education
James R. Topping, National Center for Higher Education Management Systems
Vivian Webb, American Council on Education

Summary

Background

In 1971 it was estimated by several researchers that up to 70 percent of higher education institutions were either headed for or were already in financial difficulty. The survival of the vast majority of these institutions has raised several questions: Are these institutions still in financial difficulty? If "financial difficulty" does not mean failure within 10 years, then what does it mean? Did some unforeseen set of events prevent the predicted failures?

Three presumptions underlie this study:

1. Many institutions are in financial trouble.

2. Institutions in financial trouble can either cut back services or programs or face failure.

3. Institutional cutbacks and failures limit opportunities for an appropriate higher education experience for some students, thus limiting the achievement of national higher education goals.

Purpose

Specific questions are regularly raised about the possibility of federal assistance to schools in apparent financial trouble. This study was intended to assist the U.S. Department of Education in responding to the question of what to do about financially failing institutions. In this regard, ED must understand the relationship between deteriorating financial conditions and national higher education goals. Further, since states and the institutions themselves are responsible for raising the major share of revenues and managing the institutions, their role must also be fully understood before a federal policy can be framed.

Methodology

The study was conducted by the American Council on Education and the National Association of College and University Business Officers.

In addition to the internal ED review process, an advisory committee composed of college business officers, association personnel, and federal officers provided guidance for the project, which had two specific tasks: 1) to build an analytical framework that measures how the financial condition of institutions affects national goals, and 2) to provide study findings that ED staff might easily use in developing policy implications.

The analytical phase of the study comprised two activities: 1) the compilation of a set of institutional indicators based on existing or recently collected data, and 2) a series of site visits to validate findings from the empirical analysis.

A research data bank was compiled from data collected directly by the Department of Education and from a finance data survey that used the ACE Higher Education Panel. Data were collected on institutional finances, characteristics, staffing, and enrollments for fiscal years 1975, 1976, 1977, and 1978. The data file did not include information on service academies; seminaries; institutions with fewer than 10 undergraduates; institutions with expenditures per student more than three standard deviations from the mean; medical schools and medical centers; other separate health professional schools; schools of art, music, and design; schools of law; schools of nontraditional study; and proprietary institutions.

From the research data bank a set of 38 indicators for each institution was calculated. These indicators were grouped into eight categories: 1) size (enrollments and full-time faculty counts), 2) reserve and endowment levels, 3) revenue proportions, 4) expenditure proportions, 5) per student or per faculty member expenditures and revenues, 6) scholarship-related ratios, 7) student ratios (part-time proportions and student-to-faculty ratios), and 8) debt indicators.

Ratios were calculated for each institution or system in the file. Simple regressions were run between each possible pair of indicators for each year in the file. The change in each ratio was also calculated for the period 1975 to 1978.

The site visits to 37 institutions were intended to determine more directly how institutions were in fact responding to financial stress and to test if the indicators developed during the analysis phase reflected conditions on the campus.

Major Findings

1. It appears possible to monitor institutional financial conditions, although it is difficult to predict financial difficulty. This is due in large part to the length of time between the onset of financial difficulty and the availability of data.

2. Financial difficulty is spread unevenly among independent institutions. Of the 192 regional independent higher education markets in this country, 29 are affected. Analysis of 1978 data shows that nationally only a small proportion of students are in financially weak institutions; however, in certain geographic areas the proportion of affected students could be significant.

3. Enrollment fluctuations, a commitment to low tuition, and high fixed costs have caused a significant proportion of independent colleges with full-time equivalent student enrollments of less than 1000 to be without financial reserves. (See Figure 4.15)

4. Public institutions appear to have become less financially flexible as faculty have become more tenured and personnel budgets have claimed a higher proportion of operating budgets.

5. Most minority and low-income students attend institutions that are in better-than-average financial condition. Black students, however, are somewhat more likely to attend less financially stable institutions.

6. No major crises were evident in the financial condition of institutions surveyed. Neither the numbers of students, the numbers of institutions, nor the numbers of markets affected by the financial stress suggest serious difficulties for the industry as a whole at the time of the survey.

7. Events that could radically alter the current financial condition of institutions are precipitous enrollment increases or declines and major policy changes in federal or state student financial aid programs.

8. Current federal aid to institutions has been effective. In particular, institutions participating in the Developing Institutions Program have been able to offer increased programs and services to students. Unanswered policy questions remain, however, with regard to the type of aid and the length of assistance.

9. Current trends and the suggestion of future difficulty indicate the need for improved monitoring of the financial condition of all institutions by both the federal government and the states. This applies not only to the program operating budget but to scientific and technical equipment and the physical plant.

10. Since state educational needs and opportunities may be difficult to define at the national level, it may be wise to encourage states to develop special institutional support programs that are consistent with state master plans for postsecondary education.

The study findings suggest that, overall, higher education at the time of the survey was vigorous in spite of the apparent financial decline of selected indicators. However, this could change rather significantly with changes in federal programs; thus, close monitoring of the financial condition of institutions in light of federal goals is highly important now and for the near future.

1 Findings and Implications

This report covers new technical ground and draws together data from diverse sources. Its major contribution is in elaboration. Myriad trends, correlations, and details about individual cases serve either to reinforce and confirm commonly held hypotheses, or to cast doubt on them. The following summary of findings and implications reflects the insights gained from the analyses.

Major Findings

1. It appears possible to monitor institutional financial condition. In the private sector, the adjusted reserve position can identify those institutions in the greatest difficulty. The corresponding indicator for the public sector is adjusted instructional expenditures per student; this indicator attempts to identify institutions where financial difficulty may have the most severe impact on students. Neither indicator, however, can predict financial difficulty for particular institutions or for groups of institutions. The indicators are more reliable for group analyses in which idiosyncratic institutional differences that may undermine individual analyses tend to balance each other in aggregated data.

Confidence in the indicators above varies. Chapters that follow explore a number of other indicators: financial flexibility; the condition of academic, financial, or marketing systems; and potential future financial difficulty.

One problem with monitoring institutional condition is the length of time between the onset of financial difficulty and the availability of data from current sources. The analysis in this study is largely based on financial reports of institutional operations from the fiscal years (FY) ending 1975 to 1978, though clearly much has changed at some institutions since 1978.

2. Financial difficulty may lead to curtailed educational choice in a few regional markets. Financial difficulty is spread unevenly among independent institutions. Twenty-nine of 192 regional, independent higher education markets are affected. (See chapter 4.) Several areas of the country are served by only one independent college, and the closing of that institution would limit the education available. Financial

difficulty may close a majority of the colleges in other areas. Students who would normally choose an institution because of its proximity to home, its academic programs, or its unique atmosphere may soon be unable to find suitable alternatives. An analysis of FY 1978 data shows, however, that only a small proportion of students would be affected nationally, though in certain areas the affected proportion may be significant.

3. Small independent colleges face the most serious dangers. Enrollment fluctuations, commitment to low tuitions, and high fixed costs have caused a significant proportion of independent colleges (those with FTE enrollment less than 1,000) to be without financial reserves. (See chapter 4.) Should the predicted national enrollment decline materialize before the role of small independent colleges is better understood and supported nationally, many could disappear.

4. Public institutions have become less flexible financially. These institutions are more highly tenured and have increased their personnel budgets as a proportion of overall budget. This has reduced the options available to them should state support decline further. Already, many institutions have major equipment needs that are not being met. This may result in the discontinuation of capital-intensive instructional programs. (See chapter 3.)

5. A majority of low-income and minority students attend institutions that are in better-than-average condition. However, black and low-income students are somewhat more likely to attend financially troubled institutions than are white and high-income students. (See chapter 4.)

6. The financial condition of institutions of higher education shows signs of decline. The site visits, summarized in chapter 3, indicate that an apt description of the condition of colleges is "ductile decline." Little seems fragile about these schools. When faced with adversity, they respond and fight back. They create new programs, reorganize, and even relocate when necessary. Yet after each fight, they appear somewhat weaker financially.

Reserves are down for independent colleges, and flexibility is disappearing for the public ones; scientific equipment is aging; endowments can no longer provide subsidies as substantial as those of the past; administration takes a larger and larger bite of the educational and general budget; and capital assets, especially buildings, on many campuses are increasingly in need of renewal.

Implications of the Findings

1. No crisis requiring major national policy change is evident in the financial condition of the institutions of higher education analyzed during the period of this study, 1975 through 1978. The numbers

of students, institutions, and markets affected by financial stress do not suggest serious difficulties for the industry as a whole.

2. The financial condition of institutions of higher education should be monitored periodically. Current negative trends and evidence of future difficulty suggest the need for improved monitoring of financial data. (Chapter 3 discusses some of the limitations of current data collection efforts.) Responsibility for delay associated with most financial analyses must be shared by the following: institutions, which lag in returning HEGIS survey forms; states, which delay the forms; and analysts and policy makers, who have been slow to use the data. An additional impediment to reasonable "turnaround" has been the underfunding of the National Center for Education Statistics (NCES).

3. Two potentially devastating events could radically alter the financial condition of American higher education institutions: precipitous enrollment fluctuations and major policy changes in federal or state student financial aid programs. Currently, higher education is in relative order with small annual enrollment changes leading to some stresses, some program cutbacks, and a few institutional closings, all of which have had only a minor effect on national higher education goals. Precipitous enrollment fluctuations, induced perhaps by the reduction in student financial aid, by the reduction of guaranteed student loans, or by the introduction of universal military service, could alter this assessment significantly. Financial difficulties could become so widespread that institutions that might normally have adjusted and recovered would find themselves in an untenable position. Lending institutions that once supported local colleges experiencing temporary financial difficulty could be more reluctant to extend credit once the number of troubled colleges becomes clear. And the refusal of credit may seal the fate of these institutions. The difficulties will not extend to all institutions equally, but will fall hardest on certain regions and on smaller colleges. The national goal of maintaining choice for students may be thwarted.

4. Current federal aid to institutions has been effective; more aid may be needed. The site visits indicate that the Title III program has enabled many institutions to recover and to offer more programs and services to students. Title III has been successful both in subsidizing those institutions whose mission is to serve low-income students and in giving some administrators time to restructure and reorganize.

Institutions needing subsidies will normally be those that choose to be small, to serve large proportions of less affluent or academically underprepared students, or to provide programs in expensive areas such as computer technology, health professions, or automotive and heavy equipment repair. Clientele of these institutions can rarely afford the full cost of education.

Also, federal assistance should be given for a reasonable, though not indefinite, period to institutions with management difficulties. Federal

programs to institutions must distinguish between the two types of needs--subsidy and management assistance. In the past the distinction has been blurred.

5. To avoid closing, institutions may need support in order to become smaller. Even without a general enrollment decline, many institutions have lost and will continue to lose students. In both the public and independent sectors, many institutions will need to adjust their programs, staff, and expenditures to fit enrollments more closely. Early retirement options, faculty retraining, and the conversion of dormitory space for other uses are some programs that could be funded to improve institutional flexibility.

Current students should not have to pay for facilities acquired and staff hired to serve the post-World War II surge in births and the national needs of the 1960s and 1970s. Institutions should not be forced to close simply because the costs of getting smaller exceed what students are willing to pay. The loss in terms of diversity could be enormous.

6. States should monitor the health of both sectors of higher education. Possible opportunity and diversity losses exist in a few regional education markets. Most states have programs of support, either direct or indirect, for both higher education sectors. There are a few instances where special state Title III-type programs would be useful to support certain institutions that are integral parts of the state's master plan for education. Such needs and opportunities may be difficult to define at the national level, but may be easily identified at the state level.

The states of New York and Maryland may be useful as models. Their policy of selectively supporting institutions in both sectors is of interest. While neither state program can be called completely successful, both have made significant advances in identifying policies as guides for action.

7. State and federal policy makers should reevaluate funding mechanisms that have long ignored the erosion of physical capital. In too many instances, states have funded purely on a headcount or FTE basis, ignoring the costs of capital-intensive programs. As a result, high-enrollment, low-cost programs such as cosmetology or business drive out low-enrollment, capital-intensive programs such as computer technology or engineering. It is important that financial difficulty not lead to discrimination against particular programs.

Major funding problems exist not only with scientific and technical equipment, but also with physical plant and equipment maintenance. Higher education is becoming more capital-intensive, but is hindered by funding mechanisms developed for traditional situations, such as one instructor teaching a class of 30 students.

Summary

Higher education remains vigorous in spite of apparent financial declines. Policy implications stated above are cautious because specific financial problems are widely scattered and difficult to define. If higher education remains in its current condition, few major policy changes will be necessary.

2 Measuring Institutional Financial Condition: Basic Concepts

Higher education institutions are in fact organisms, and we depend on their health for the effective pursuit of personal and national goals. Each institution is different from the others in some way; each institution changes from one year to the next. This variety fosters experimentation, however, only when the organisms are healthy enough to respond and evolve.

Understanding the link between the achievement of national goals for higher education and the health of the fundamental unit of providing education--the institution--requires better understanding of the systems that make up the institutions and connect them with the other units of our society and economy. In this chapter, exploration of the academic, financial, and competitive/market systems is brief and is intended only to lay the foundation for more operational measurements of "health." To examine what is operational in the discussion of financial condition means to explore what parts of the various systems have been or could be measured and how those measurements might be interpreted.

This chapter concludes with a discussion of the implications of the systems and the measurements. What premises must guide the assessment of financial condition? How must the systems operate for the measurements to be interpretable? What are the limits on those interpretations?

The goal is to use the available measures to assess higher education's ability to continue to meet its national objectives.

I. Systems

The Academic System

This brief description is intended to define only the essential core of the institution--that for which all else exists. The heart of the academic system contains the faculty/student interaction and the researcher in his or her environment. Important in this system are the sets of experiences that lead to the development of the students: contact with faculty in classroom and nonclassroom situations, contact with other students, library use, and contact with media other than books.

The academic system can be described by the majors and academic programs offered, by the course catalog, by the success of the graduates, by the vitae of the faculty, and by the preparation of the entrants.

Defining the core of the institution and drawing a line between the essential and the nonessential are difficult. The essential core is simultaneously circumscribed by available resources and expanded by the dreams of an institution's leaders. A claim that the teaching of English is part of the essential core and that job placement counseling is not is no longer valid. It is sufficient to note that some essence of a university exists and that that essence must be maintained. Other systems exist to provide that maintenance.

The Financial System

The financial system is described by the inflow and outflow of resources. Differences between inflow and outflow lead to the buildup or reduction of institutional resources. Easily measurable inflows are state and local government funds, tuition, grants and contracts from research sponsors, gifts, and endowment earnings. Inflows associated with goodwill and reputation are more difficult to measure. Outflows occur as buildings deteriorate and equipment reaches obsolescence. Outflows also occur as funds are paid out for expendable materials, services, and debt interest. Salaries paid to faculty and staff will be considered here as investments in resources. Outflow occurs only when the investments are lost as a result of staff turnover or as the effectiveness of individuals declines when they are unable to keep up with new material in their field of teaching, research, or administration. For most institutions, the yearly investment in personnel is a very high proportion of the budget, but even this rate of investment is barely sufficient to maintain the steadily deteriorating personnel asset.

When inflows exceed outflows, the institution can invest more in its resources. These investments can be financial or nonfinancial. Financial investments include reserves for possibly difficult times ahead and endowments to enhance future inflows. Regarding nonfinancial resources, the institution may invest in personnel by adding faculty or staff or by upgrading pay scales. Whole new programs may be added. An institution may also invest in its administrative system, sometimes in an effort to reduce outflows. Other investments may be made in buildings or equipment.

Reserves or endowments may be depleted if outflows exceed inflows, programs may be dropped or faculty pay held down, and buildings may be allowed to deteriorate.

One resource may be changed into another without disturbing inflows or outflows. For example, financial reserves may be drained to construct a new building, or debt (essentially a negative financial reserve) may be secured to fund faculty salary increases.

The financial system is highly dependent on administrative decisions. The institution's administration controls outflows and selectively seeks to improve various inflows. Even when inflows exceed outflows, an administration may elect to allow some resources to deteriorate (e.g., buildings may be repaired or improved while financial reserves are depleted).

The distinction between public and independent institutions is most visible in the structure of the respective financial systems. Public institutions rely more on government appropriations and less on student tuitions and are less likely to invest in financial resources. Both taxpayers and legislators may view financial reserves as evidence of overfunding. Public institutions often must depend on the state for protection from economic fluctuations.

The wealthy institutions have managed to build resources--they have highly regarded faculty, ample financial reserves, large endowments, and well-maintained buildings. Institutions that are unstable financially may have a history of outflows exceeding inflows to the extent that large amounts of debt leave those institutions practically without net resources.

Competitive Market System

Institutions compete for students. Much of the dynamism of American higher education stems from the ability of students to choose, within certain limits, the institutions they wish to attend. Those institutions base their existence, importance, and sometimes their growth on the numbers and quality of students they attract. The result is a market situation in which colleges are sellers and students are buyers. The price is tuition, fees, other expenses, and loss of potential earnings.

This buyer/seller relationship cannot be described as a perfectly competitive market situation, however, because educations--the commodities purchased--are only roughly comparable. Also, many institutions are heavily subsidized (through direct and indirect appropriations) for their participation in the market. The subsidies are justified by the fact that many benefits of a higher education accrue to society as well as to the student.

Both buyers and sellers can be divided into basically noncompetitive groups or market segments. Colleges may dominate geographic areas, as in a community college's "service area." Other institutions differentiate themselves by their perceived quality, their cost, their social opportunities, their academic programs, or their "atmosphere." Also, students have a range of interests and differ widely in their ability to pay.

In any given market a student may actually find only one or two reasonable alternatives from which to choose. Geography, academic talent,

financial status, and prior socialization all work to limit the choices available to students. Rarely is competition among institutions fully head to head, and each institution tries to specialize in some way.

Complete overlap is, in fact, becoming rare as institutions develop marketing plans that seek to enhance institutional "distinctiveness." Program differentiation, such as the offering of specializations in international business within an M.B.A. program, justifies high investments in certain areas to best serve certain students. Geographic differentiation keeps student costs down and allows those who are tied by occupational or home responsibilities to seek further education.

Until recently, higher education operated with a surplus of students, and institutions could serve particular types of students. As the surplus dwindles, the market will have to adjust. Increasing overlaps may cause some schools to specialize further or close. The attempt to serve more types of students in order to enlarge enrollments may cause further thinning of resources.

The system as currently structured depends on the general availability of a range of students and a range of institutions. Institutional competition assures sensitivity to both the student's and the society's needs and desires. Free choice for students is necessary to foster this competition.

Systems Interactions

Enrollments produced by the market system are the primary determinants of the inflows of the financial system. An institution's success in the market thus largely determines its financial condition.

As the financial system builds resources, the academic system may gain by obtaining more faculty, better pay, and better equipment.

Also, an improved academic core can improve the institution's drawing ability and improve its position in the market. Changes affecting the financial system can affect the academic system, which in turn can affect the marketing system.

The management of the institution serves to coordinate the three main systems and insure their functioning. Administrative policies structure relationships among students and determine who reports to whom, how budgets are put together, and how institutional plans are to be devised. An institution's systems are not independent--actions in one can directly affect any of the others.

II. Institutional Health and the Fulfillment of National Higher Education Goals

A summary of what is required to fulfill higher education goals might be simply stated as good programs (excellence), good availability (access, choice, and opportunity), and reasonable cost.

Good programs require healthy academic systems that can be built by being connected to financial systems in which inflows exceed outflows. (This does not simply mean balanced budgets, because it is possible to show balanced budgets when in fact buildings, equipment, and staff are being allowed to deteriorate.) Good programs thus rely on maintenance of resources. To the extent that new subjects must be taught or researched, resources in the academic system must be increased or diverted from one area to another.

Good availability includes placing programs where students can reach them and insuring the existence of enough openings to accommodate all who need the training. Judgments about adequate availability are difficult to make. Students who choose to continue their employment during schooling, for example, will want programs within commuting distance of home.

Good availability is related to financial condition (i.e., if a school's financial condition deteriorates to the point where it must actually close or terminate programs, then availability suffers). The closing of institutions or the termination of programs because of a lack of students, however, does not necessarily cause a decline in opportunity or access. No one is denied an "appropriate" education in that event. Hence, deteriorating financial conditions do not necessarily lead to a reduction in program availability.

Financial difficulty can also drive up the cost of a student's education, thwarting the fulfillment of the third goal: reasonable cost. Once again, establishing an absolute standard for reasonable cost is difficult. Costs may be high yet still commensurate with the benefits (in terms of salary and nonsalary advantages) of the education received. High costs thus become a barrier to those without the current capital to invest in an education as well as to equality of academic opportunity, unless mechanisms exist to defer costs or redistribute them among other members of society.

Poor management or major societal demands on institutions for services other than education may drive costs to the point where it is no longer worthwhile for many individuals to invest in education. In this case the national economy and society in general suffer because important skills and aptitudes become scarce. Even if wages for those with a higher education are raised to draw more individuals through the system, productivity suffers because industry must then pay for the inefficiency of the educational system. The competitive position of industry in the international market is thus diminished.

This consideration becomes important to an analysis of institutional financial condition because institutions that are struggling for survival may find their costs escalating and may pass some of those costs on to students. Hiring more recruiters, adding development personnel, and investing in new financial management systems may increase institutional costs, although the intention of the institution is usually the opposite.

Good programs, good availability, and reasonable cost to the student are functions of the health of institutional financial systems. The particular type of financial problem and the extent of those problems must be determined before the impact on programs, availability, and costs can be estimated.

III. Stresses and Responses Related to the Marketing, Financial, and Academic Systems.

The stresses that affect each of the three systems--marketing, financial, and academic--are different, and each system responds in different ways. In addition, one system may respond to the stress felt by another. This section provides a framework for evaluating the stress-and-response relationships among the three systems.

Marketing System: Stresses and Responses

The major stress that the marketing system faces is a decline in the availability of students. This stress may be further subdivided into:

- Demographic decline.
- Declining high school completions.
- Declining college participation rates.
- Increased competition from existing colleges.
- Increased competition from new colleges.
- Increased competition from colleges starting new, similar programs.

The response that comes from within the marketing system comes in the form of changes in marketing strategy:

- More intensive recruiting.
- More effective publicity.
- Greater contact with prospective students.
- Greater emphasis on fund raising.

In addition, to respond to enrollment stresses, responses from the academic and financial systems may be passed through the marketing system. Those responses include:

- Lower tuitions and more financial aid. These are financial system responses (aimed at stresses on the marketing system).
- New programs and more faculty involvement in retention. These are responses of the academic system to marketing system stresses.

Problems in the marketing system can be passed on to the financial system. Not all stresses are passed on, however. In many cases the response of the marketing system is sufficient to buffer the financial system from stress. For example, decline in available students may be met successfully by a redeployment of recruiters to more appropriate market areas. The net result can be level enrollments with no impact on finances.

Financial System: Stresses and Responses

The responses of the marketing system may be inadequate to protect the financial system. Direct stresses on the financial system include:

- Declines in tuition revenue as enrollments fall.
- Increases in scholarship costs as more aid is offered to students to induce enrollment.
- Increases in recruiting costs that exceed increases in revenue.

In addition, the financial system faces a series of external stresses:

- Higher costs to provide the same level of service.
- Increasingly expensive regulatory demands.
- Declines in private giving.
- Declining stock market yields.
- Declines in other revenues, such as the total return on short-term investments.

Response to these stresses comes from within the institution. Institutions may have the capacity to:

- Increase fund-raising efforts.
- Cut costs without reducing service levels.

- Reduce service levels (including reductions in administrative staff).
- Deplete financial reserves to continue to provide cash flow.
- Deplete physical plant resources by deferring maintenance.

These responses are alterations in the financial system. In many cases they may be sufficient to buffer the academic system from stress. In fact, the financial system, when working properly, should perform well enough not only to protect the academic system, but to build and nurture it.

Academic System: Stresses and Responses

The academic system comes under stress when the financial system can no longer provide adequate resources. It is then the academic system's turn to respond. The response options available within the academic system include:

- Program quality decline (fewer faculty, faculty with poorer qualifications, fewer teaching supplies, inadequate equipment).
- Elimination of programs to save funds.
- Reduction in research facilities.
- Higher teaching loads.

These reactions may all affect program quality or opportunity. And erosion of the academic system affects students in ways that also affect the national goals of opportunity and excellence.

Interactions Among Systems

The central object of concern, the academic system, is buffered by the other two systems: the marketing system protects through selectivity and responsive marketing strategies, and the financial system protects through the buildup of reserves and through responsive financial stategies.

The nature of its stresses determines an institution's requirements for buffers in its financial system. The less these stresses vary in intensity from year to year, the less the institution needs to invest in financial resource buffers and in quick-response strategy building. If the environment is uncertain, however, as when enrollment fluctuations or inflation shifts are great, the institution should have larger financial reserves and should invest more in marketing and financial systems that can respond more quickly to stress.

To protect the academic system, the resources of the marketing and financial systems must increase as risk (in the form of environmental fluctuation) increases.

Two hypotheses complete this description. First, the marketing and financial systems react much more quickly to stress than does the academic system, because that is one of their major purposes. Second, not all academic responses are harmful. Changes in the academic system are, in many cases, adjustments to the needs and desires of the marketplace.

IV. What can be measured?

It is now possible to sort out the "indicators," which may be used to measure:

- Stresses.
- Responses.
- System states or conditions.

Stresses that can be measured include:

- Enrollment declines.
- College-going rate changes.
- Inflationary pressures.
- Gift-giving trends.
- Endowment performance.
- Revenue declines.

Responses are more complex, but some can still be measured:

- Student recruitment budget changes.
- Increases in budget-control procedures.
- Additions or deletions of programs.

The following are possible measures of the state or condition of the various systems:

- Institutional selectivity.
- Amount of financial reserves.
- Level of deferred maintenance.

- o Number of courses offered.
- o Salary level of faculty.
- o Student-faculty ratios.

Changes in these measures of system condition are reflected in a variety of responses, although often the changes are not made in direct response to a particular stress.

Limitations of System Measures

The academic system has the most direct relationship to students; consequently, the most useful measures of student factors are measures of the academic system. The usefulness of measuring aspects of the marketing and financial systems depends on how closely linked the systems are and on how institutional survival relates to the health of the other systems. If the systems are closely linked, then stress in one means stress in all: financial difficulty means decline in the academic system and hence decline in excellence and opportunity. Access and choice require a variety of institutions and programs. System health measures are useful in predicting problems with meeting goals for access and choice only to the extent that those measures relate to institutional survival.

Linkage Limitations

The degree of linkage of the systems partially depends on whether the institution is public or independent. Historically, the systems of an independent institution are more tightly linked than those of a public institution. This is because public institutions exist regardless of enrollments, and because the states have assumed most of the responsibility for funding. In institutions with tightly linked systems, any declines in enrollment-driven or other revenues are directly felt, first by financial reserves and then by the academic system. Institutions that have exhausted their marketing and financial reserves are likely to feel the heaviest environmental stress in their academic system.

Sets of systems that are loosely linked, as in the public sector where state resources have been available in the past, may demonstrate little connection between environmental stresses and academic program responses. Enrollment declines may not mean revenue declines, and difficulty in balancing budgets may not mean any erosion of the academic program. Many states have had funding floors and other forms of revenue protection.

All this may be changing, however. As states become less able to support public higher education, they may be becoming less able to protect institutions from stressful fluctuations.

An increase in external pressure means that stresses, such as enrollment declines, will improve as predictors of the future condition of financial and academic systems, because the linkages between the systems grow tighter as buffers, such as state-level emergency appropriations and financial reserves, are depleted. Also, increased stresses on and deterioration in the financial system (e.g., declines in financial reserves) will become more accurate predictors of academic system declines as systems become more closely linked.

Analysts must remember, however, that predictors are only related by probability to the outcomes of concern--loss of opportunity and program quality.

Survival Limitations

The difference between public and independent institutions is reflected in one other way. Institutions can choose to close (or can be closed) whenever they are unable to meet their financial commitments. Public institutions have relied on the state for continued support when outflows have exceeded inflows; independent institutions must often turn to private lenders. In the past, private lenders have been somewhat less reluctant than the state to shut off support.

The continued existence of many institutions depends on their ability to stay within certain limits. Some financial system difficulties can be alleviated by reductions within the academic system, but certain institutions may establish criteria that, if one or more are met, would force closing:

1. Enrollment decline, either as an absolute number or relative to some peak, that saps the institution's "will to live."

2. Financial reserve depletion (possibly extending into heavy borrowing) that prevents the obtaining of further external support.

3. Academic program reduction that causes loss of identity.

Because no two institutions use the same criteria, measures of system condition are in many ways poor predictors of changes in access and choice for any single institution.

Summary

Indicators of stress, response, or system condition are useful in assessing the impact of changes in the environment. The predictive

quality of these indicators depends on the closeness of the connection between the systems and their tolerance for deteriorating conditions and on certain factors unique to each institution.

Indicators can be best used to show trends within groups of institutions. For example, enrollment declines will affect the condition of a group of institutions more than a single institution because some proportion of the institutions will react successfully to such declines. Interacting factors play too large a part to allow confident assessment for single institutions.

3 Summary of Site Visit Findings

Site Visit Procedures

The purpose of the site visits was to examine firsthand how institutions respond to financial stress and to test if the indicators of stress developed during the analysis phase reflected true conditions on campus. The project staff and advisory committee selected the 37* institutions in the site visit sample based on a set of criteria that emphasized potential contributions to an assessment of financial condition. Financially stable institutions are underrepresented because they are less likely to provide illustrations of responses to financial stress. The following institutional characteristics entered into the selection process:

- Changes in institutional mission emphasis
- Changes in financial resource levels
- Changes in enrollments
- Changes in absolute faculty counts
- Changes in public support availability
- Changes in private support

The sample institutions are located in six regions throughout the country, and most of the institutions in each region are located within a 50-mile radius. This clustering allowed the staff to explore market competition among institutions.

The sample also reflects a diversity in type and control of institutions. The following summary of the sample identifies the type and control of each institution visited in each region:

Northeast	Mid-Atlantic
Two-year, public	Two-year, public
Four-year, public	Four-year, public (2)
Four-year, private (5)	Four-year, private (3)

* Forty-one institutions were actually visited. The first four were preliminary and for the purpose of developing the interview format.

South

Two-year, public (2)
Four-year, public
Four-year, private (3)

North Central

Two-year, public (2)
Four-year, public (2)
Two-year, private
Four-year, private

Central Plains

Two-year, public
Four-year, public
Two-year, private
Four-year, private (3)

Northwest

Two-year, public (2)
Four-year, public
Four-year, private (3)

Prior to the site visits the project advisory committee met to review the site visit plans and to comment on a proposed questionnaire that would be used to structure the interviews. The committee and the project officers chose four schools as field-test institutions to provide reactions to the interview instrument and to assess the adequacy of the study's methodology. After modifications based on the field-test visits, the questionnaire was submitted to the Federal Education Data Acquisition Council (FEDAC) for clearance. Approval was obtained in September 1980. The site visits began in mid-October and concluded in December.

Typically, the site visit interviewers spent one day on each campus. They interviewed the president or chancellor, the chief academic officer, the chief business officer, the director of admissions, the director of student financial aid, and the director of institutional research.

Caveats

The site visits were designed to be exploratory and were intended to provide a partial census of actual and potential responses to stress. Those responses should be regarded as illustrative and not necessarily representative. The following caveats should prevent any hasty or unfounded extrapolations to higher education institutions in general.

1. There are more than 3,000 colleges and universities in the United States. These site visits included only 37. Nothing in this chapter should be applied to the remainder of higher education without careful consideration and study.

2. The marketing, financial, and academic factors that led to the stress observed at most of the campuses visited are indeed real and current problems. However, those problems vary greatly in kind, in degree, by sector, and by state. There exists no general solution for all campuses. Each community college, college, and university should devise its own solution within the broad limits of statewide educational policy.

3. Almost every administrator acknowledged the demographic decline of the overall college-age population. At only two institutions, however,

were even modest projected enrollment declines used as the basis for planning during the next five years. At most of the institutions expectations were for steady enrollments at current levels or enrollments that would slowly increase because of new programs and new types of students, such as adult learners. The fact that only two institutions are preparing for the management of decline does not mean that misguided optimism is the rule among a majority of institutional administrators. The other institutions in the sample should be judged in the context of the actions they are taking to maintain enrollments. Those actions encompass expanded and improved programs dealing with recruitment, retention, institutional fund raising, and academic review.

A major conclusion of the site visits was that the financial indicators developed during the analysis phase did reflect the financial condition of the institution. Where the basic data had been reported incorrectly, the analysis did not match campus conditions.

A corollary finding was that the indicators reflected campus conditions only for the period analyzed (1975-78) and were not able to predict conditions for fall 1980. Many previously stressful situations had been or were in the process of being "turned around" during the period when the interviewers made their site visits. Institutional administrators explained this in two ways: 1) economic conditions in fall 1980 contributed to enrollment increases nationwide, and 2) the stressful conditions themselves mandated a response.

Marketing Stresses and Responses

All those interviewed in the area of student recruitment and admissions recognized the national decline in the number of 18-year-olds. Many were able to recite specific statistics, such as the projections that there will be 26% fewer 18-year-olds in 1994 than there were in 1979. Most also realized that the national aggregate data do not show the wide regional disparities that will occur. Many institutions had already experienced enrollment declines in the mid-1970s, and most interviewees assumed that the imminent demographic declines will translate into enrollment declines if their institutions do not actively pursue various programs. Administrators identified four stresses in the marketing environment:

- Decline in the 18 to 24-year-old age group.
- Poorer academic preparation of entering students.
- Decline in higher education participation rates.
- Decline in twelfth-grade completion rates.

In response to these factors, administrators at 60% of the institutions indicated that they had begun to recruit undergraduate

students "more aggressively." Thirty-eight percent said they were recruiting with about the same degree of vigor as before. Those interviewed at one institution said they were recruiting less actively because the new technical programs they had initiated were so successful that they had to turn away well-qualified applicants.

Administrators were asked to identify new recruitment techniques and programs that they had used or were expecting to use in the near future. The techniques mentioned can be grouped under the following broad headings:

1. Direct student contacts
    a. More direct mail/regular mailing to prospects.
    b. Personal letters from faculty and deans to outstanding applicants.
    c. Visits to places of employment.
    d. Telephone recruitment.
    e. Installation of toll-free telephone number.
    f. Personal contacts by institutional personnel at vacation spots.
2. High schools
    a. Cooperative programs with high schools.
    b. Faculty involvement in recruiting.
    c. Communication of admissions status of students.
    d. Concentration on nonproductive areas.
    e. Extension of recruiting efforts into spring.
    f. Encouragement of campus visits.
3. Alumni, trustees, and churches
    a. Enlargement of alumni network.
    b. Use of alumni for gatherings according to geographic area.
    c. Use of trustees in recruiting.
    d. Targeting of parishes for recruitment after church services.
4. Publicity
    a. Increased use of newspapers, radio, television, and college-day coverage.
    b. Development of consumer-oriented literature.
    c. Development of new logo, image, and publications.
    d. Emphasis on new/different target populations.
    e. Use of mobile van.
    f. Use of information booths, staffed by faculty and admissions personnel, at local shopping malls on weekends.
5. Other techniques
    a. More competitive honors scholarhips.
    b. More scholarships for local area residents.

c. Improved information management through computer assistance (for example, word processing of inquiry letter and use of commercial mailing lists of prospective students).
d. Contacts with business/industry regarding employee training needs.

Of new student services initiated in the past few years to enhance the recruitment program, four were most often mentioned: programs to recruit minority and women students, special programs to recruit international students, remedial or developmental education programs, and special exceptions to the normal admissions requirements. Other services begun or anticipated include:

- Special programs for nondegree students.
- Special programs for nontraditional students.
- Emphasis on programs relating to employment.
- Scheduling of short-term programs.
- Scheduling of more classes in the late afternoon and evening.

Most top administrators were keenly aware that the recruitment function was vital to maintaining their position in the college marketplace. A number voiced the fear that the pressure to generate prospects and applicants and to matriculate students could well lead to unethical recruitment practices, including:

- Admission of unqualified applicants.
- Enrollment of poorly qualified students without adequate remedial programs.
- Admission of suspended students without qualifications.
- Guaranteeing of graduation to select students such as athletes.
- Misrepresentation of programs.
- Misrepresentation of facilities, costs, and job opportunities after graduation.
- Exploitation of foreign students.
- Use of headhunters to recruit.

The overwhelming majority of the institutions visited have expanded and are continuing to expand their admissions function to meet perceived stresses in the marketplace. Retention of current students has received

new attention because of the need to maintain enrollment size and to be sensitive to consumer oriented issues. Responses to stress in the marketing area can be categorized as "more and better"--more staff, more communication, better programs, and better planning.

Financial Stresses and Responses

The three primary causes of financial stress at the site visit institutions were legacies from the period of growth, the spiraling costs of inflation, and the costs associated with socially imposed programs and government mandates.

Procedures and attitudes developed during the 1960s and early 1970s--a period of growth--were no longer appropriate in the mid-1970s when retrenchment and cutbacks were needed. In the growth period, errors in one year's budget were corrected by enrollment increases in the next year's budget. Administrators and faculties were reluctant to examine operations and to establish priorities among programs, which proved disastrous to effective college administration when other stresses began to appear in addition to soaring inflation.

Between 1966-67 and 1979-80, the Higher Education Price Index (HEPI) for the "market basket" of current goods and services purchased by higher education rose from 100 to 255, as measured by D. Kent Halstead of the National Institute of Education. This is slightly higher than the Producer Price Index (formerly the Wholesale Price Index) of the U.S. Bureau of Labor Statistics (the Producer Price Index rose from 100 to 249 over the same period). Even though higher education has not suffered significantly more from inflation than other industries, the costs of goods and services from outside vendors have increased more rapidly than have the specific funds available for them. Business officers reported that, in areas other than direct instructional costs, there was very little flexibility left to accommodate further reductions.

In the instructional area, the concern heard most often was the effect of inflation on supplies needed for instruction in the sciences. The costs of chemical supplies, such as silver nitrate, have skyrocketed; biology students have had to share specimens. It was not uncommon to hear that faculty members had purchased supplies with their own funds.

Few of the persons interviewed complained about the objectives of most government-imposed programs. They did, however, express concern about the institution's ability to assimilate all such programs in the required short period of time. In addition, they criticized the government for clumsy administration, lack of understanding of the academic community, arbitrariness, tactlessness, redundancy, and inefficiency. The costs for actual operation of the programs and the costs associated with supplying compliance information were very troubling to most administrators, who stated that cost estimates were difficult to calculate because necessary data were unavailable and the categories so elastic. The following were

among the areas mentioned most often by administrators as causing particular hardship or concern: payroll taxes and employee benefits; costs stemming from legislation in the areas of collective bargaining, the minimum wage, and overtime; expenditures for equal opportunity, affirmative action, and other programs for minorities and women; shared costs in government grants and contracts; costs of general compliance, statistical reports, and other paperwork; and costs for new security measures and for mandatory changes in buildings required by new building codes, by fire marshal directives, by the Occupational Health and Safety Administration (OSHA), and by section 504 (accessibility for the handicapped). A few administators openly admitted that some part of these costs have been financed by trimming programs, compromising educational quality, and reducing operating efficiency.

To respond to those stresses and to balance their budgets, most institutions focused on controlling costs internally through short-run economies. The most common steps were to hold down faculty salaries, defer maintenance of buildings and equipment, postpone needed equipment purchases, cut budgets in the areas of supplies, travel, and library books, and permit vacant positions to remain so. Three institutions sold land and other assets to meet obligations, and one drilled for gas on its land.

Administrators are beginning to question the appropriateness of "across-the-board" reductions, which had been quite prevalent. Selective reductions that emphasize program considerations are now seen far more frequently.

Fund raising and grantsmanship are two major activities begun or greatly intensified at institutions in financial difficulty. Most presidents now consider those areas central to accomplishing the mission of the college. In many instances a new director of development had recently been hired and the development staff upgraded. Proposals to secure Title III funds had been written at almost all qualifying institutions.

Coordinating and governing bodies establish the context in which public institutions are able to respond to stress. The procedures of those bodies were not examined in any detail, partly because many of the factors causing stress were beyond the control of those organizations. However, impressions gained during the interviews seemed to point to the fact that successful responses to financial stress were tailored to an institution's individual circumstances. Coordinating or governing bodies that impose blanket rules for responding to stress may be causing more harm than good.

Approaches to coping with financial stress varied according to the situation. For institutions in serious crisis, the goals were few. Enrollments had to be stabilized, expenditures reduced, cash flow improved, and credit restored. Those institutions not in crisis (and with reserves) used more sophisticated approaches to management. Long-range

plans were produced. Reviews were undertaken in curriculum, teaching, advising, and student activities. Development activities, such as a capital campaign or a program of deferred giving, were either under review or in progress.

Academic Stresses and Responses

Problems originating in the finance and marketing areas have caused the major stresses in the academic program area. Sources of both the greatest disruptions and brightest innovations in the academic programs of the institutions visited were variable enrollments; inflation and limited resources; and the special needs of part-time students, adults, minorities, and remedial students.

Informed critics and observers of higher education have stressed that the educational program is central to an institution's appeal and vitality. In the past the program has been tailored to the institution's distinctive mission and goals. However, many institutions that have encountered the era of scarce resources have begun to shape the program according to the demands of the marketplace. An extreme example of this was encountered during the site visits.

In 1976, the trustees of a small, liberal arts college analyzed their position and accepted the prognosis: the institution was almost bankrupt. Although the college was run by an order of Catholic priests, the trustees realized they needed more than dedication and a belief in the liberal arts in order to survive. After extensive study, planning, and review, the trustees decided not to close the doors but chose instead to merge with a newly founded graduate medical school for osteopathic physicians. The two schools formed a university. The undergraduate college has begun to offer more and more courses and degrees associated with medicine and health management. A new college of allied health will open soon and will include career preparation programs for physical therapists, occupational therapists, and medical records technicians. A core of general liberal arts studies still exists in spite of the new emphasis on careers in health. Enrollment has doubled.

At the institutions that experienced marketing stress, a key response from the academic area was heightened attention to changing student interests and the changing job market. Undergraduate business colleges had added liberal arts minors to the curriculum. Liberal arts colleges had added courses in business, accounting, and computer science. Review of existing as well as new programs has become progressively more important.

Other responses to enrollment fall-offs include:

- Increasing the size of classes and laboratory sections and eliminating sections with less than a specified minimum enrollment.

- Offering more elective courses in alternate years.
- Eliminating academic programs that have too few students to justify continuation.
- Participating in a consortium to allow courses to be taken elsewhere.
- Allowing creation of a new course only if an existing one is dropped.

In an effort to cope with inflationary pressures, many programs are using less expensive materials, less equipment, and fewer supplies for laboratory experiments. Needed equipment purchases have been postponed, resulting in the continued use of technology that is generations removed from state of the art. Class field trips have been curtailed and in some cases eliminated because of the high cost of transportation. Only a few administrators said that the quality of their offerings has been impaired by the effects of inflation. The typical response was that quality has been maintained through imaginative new approaches and the cutting of nonessentials, but that the limit has been reached. Quality of instruction will deteriorate in the near future if additional resources are not found.

The Physical Capital Issue

Physical capital problems at the site visit institutions warrant separate discussion. The deferral of both plant maintenance and equipment purchases is a typical response to financial stress--balancing the budget takes priority over capital investment. However, the backlog of deferred maintenance and the inadequacy of instructional equipment are now sources of stress at many of these institutions.

Deteriorating plants and obsolete technology, observed during the site visits, point to a worsening financial condition that is not readily apparent in financial statements. One public university has a priority list of deferred maintenance projects that will cost $1,000,000, and a community college had to drop a promising computer program from its curriculum because it lacked the accumulated reserves necessary to replace obsolete equipment. Though these examples may appear to be dramatic extremes, they typify the situation at many of the site visit institutions.

At first, deferring maintenance of buildings and equipment was an effective management technique for achieving short-run economies and a balanced budget. Experience has shown, however, that after a certain point deterioration is irreversible, and replacement--much more costly than maintenance--becomes necessary. Most business officers interviewed have begun to understand this process and are struggling to identify new revenue sources to pay for repairs, replacements, and renovations. A few have made capital renewal a top institutional priority by developing a program that incorporates capital renewal in the annual budget cycle. However, most administrators continue to be frustrated by their physical capital problems.

4 Analysis of Three Critical Indicators

Three indicators have been selected for analysis. The analyses show which types of institutions in which geographic locations rate poorly in terms of the indicators. Further, students grouped by race, income category, and apparent financial need are sorted according to the condition of the institutions they attend. The third indicator is size and relates closely to many of the financial difficulties of independent institutions. Its importance is analyzed in somewhat more depth.

The first indicator was developed to sort public institutions into those that provide more and those that provide less instructional budget support to students. The purpose of the analysis is to determine if current financial stresses have led to inadequate distribution of quality academic offerings to students by race or economic background.

The second indicator was developed to sort independent institutions into those with higher and those with lower financial reserves. Although previous analysis does not show that students attending institutions with lower reserves receive any less in terms of academic budget support, there is concern regarding future opportunities, as these institutions are most likely to close if their enrollments fall. They are currently in debt and have few uncommitted financial resources from which to draw. Predicting closing for any single institution is impossible; institutions have even been known to survive bankruptcy. The analysis is based only on the increased probability that these institutions will not survive particularly difficult times when fewer high school graduates will be available. As Chapter 3 emphasizes, however, institutions adapt and react to adversity. Statistics herein are only crude measures of the relative probability of closings.

The third indicator--enrollment levels--appears critically important for independent colleges. Small colleges are much more likely to experience financial difficulty than are larger colleges. The discussion of this indicator explores some of the theories underlying the relationship between size and financial difficulty.

Adjusted Instructional Costs per FTE Students (Public Institutions)

The analysis in this section divides institutions into rough quartiles for two-year and four-year groups separately. The resulting cut-off points are shown in the table below.

Table 4.1

Ethnic/Racial Student Distributions by Adjusted Instructional Expenditures

Public Four-Year Institutions

Adjusted instructional expenditures per student	less than $1200	$1200-1500	$1500-1800	more than $1800
Total headcount	15%	17%	31%	37%
Black students	17%	20%	32%	31%
Hispanic students	10%	25%	41%	25%
Black and Hispanic	13%	22%	36%	28%

Public Two-Year Institutions

Adjusted instructional expenditures per student	less than $800	$800-1000	$1000-1200	more than $1200
Total headcount	26%	39%	20%	15%
Black students	20%	36%	25%	19%
Hispanic students	21%	44%	24%	15%
Black and Hispanic	20%	40%	24%	15%

A state-by-state analysis was attempted by setting a cut-off level at the median adjuted instructional expenditures per student for two-year and four-year colleges separately. The distribution is not particularly enlightening, however, given the small number of each type of college in each state. (For a more in-depth study of state-by-state expenditure patterns, see a series of studies by McCoy and Halstead entitled "Higher Education Financing in the Fifty States," published by NIE.)

One concern is that the distribution of students (especially racially and ethnically) by institutions in differing financial conditions may limit equality of opportunity. In public, four-year institutions, black students tend to be found in the low-expenditure institutions to a greater extent than students as a whole. Black students are slightly

underrepresented in the highest expenditure category. Hispanics tend to cluster in the middle categories, not having a large proportion of their students in either the lowest or highest expenditure categories.

In public, two-year institutions, black students are more numerous than the total enrollment population in the higher expenditure categories. Hispanics once again are clustered in the two middle categories.

Though many of these differences are statistically significant, they are not large enough to support the familiar argument for government assistance to underfunded institutions with predominantly minority enrollments. Minorities (at least blacks and Hispanics) are spread among institutions of all financial conditions. Some maldistribution is visible, but probably not enough to prompt federal policy makers to support financially troubled public institutions.

Further data concerning student distribution was obtained from the ACE/Cooperative Institutional Research Program (CIRP) survey of fall 1979 college freshmen, which used data from 14,000 freshmen in 344 colleges. Table 4.2 shows that the sample of institutions in these data is biased toward the "more affluent" institutions. In the category with the lowest adjusted instructional expenditures per student, there are proportionately fewer freshmen CIRP respondents than one would expect, given the distribution of total headcount students by category shown in Table 4.1.

Nevertheless, Table 4.2 is useful in a limited way. For this sample of institutions, nonwhite freshmen are more than three times more likely to attend colleges in the lowest expenditure category. (Two-year and four-year categories are distinct, so the maldistribution does not result from the predominance of nonwhite students in two-year colleges.) Still, the majority of nonwhite freshmen attend colleges in the highest categories.

CIRP data also allow examination of parental income distributions. Students with parents earning under $6,000 are nearly four times more likely than are all freshmen in the sample to be attending institutions in the lowest category. Once again, the majority attend institutions in the higher categories.

The distribution for handicapped freshmen, freshmen not accepted at any other college, and freshmen with Pell Grants (BEOGs) above $1,500 is roughly similar to the distribution of all freshmen among institutions in the four categories.

First-time students wishing to live at home and first-time students attending institutions within five miles of their homes appear much likelier than all first-time students to be attending institutions in the lowest category. The programs offered are neither of high cost to the institutions nor of high return to the students. Hence, students are reluctant to invest as much--in the form of a long-distance move from home--in these institutions.

Table 4.2

Distribution of Types of Freshmen in Public Institutions By Adjusted Instructional Expenditures Categories

Adjusted instructional expenditures per student	Cat. I* (Lowest)	Cat. II*	Cat. III*	Cat. IV* (Highest)
Freshmen respondents	3.7%	15.1%	29.0%	52.3%
Black freshmen	10.0%	37.0%	13.3%	39.6%
White freshmen	1.5%	12.1%	31.1%	54.3%
Nonwhite freshmen	11.3%	34.8%	15.1%	38.8%
Freshmen with parental income < $6,000	12.1%	31.4%	21.8%	34.7%
Freshmen with parental income < $12,500	8.0%	25.3%	25.1%	40.6%
Handicapped freshmen	5.1%	18.1%	26.7%	50.1%
Freshmen not accepted anywhere else	4.5%	27.2%	18.7%	48.6%
Freshmen wishing to live at home	7.1%	26.4%	26.1%	40.4%
Freshmen with BEOGs above $1,500	6.3%	25.0%	19.2%	19.5%
Freshmen living less than 5 miles from home	16.6%	30.6%	20.1%	32.7%

* This table combines the categories for four-year and two-year institutions. See Table 4.1 for the dollar amounts per category.

Source: ACE/Cooperative Institutional Research Program, Freshman Survey, Fall 1979, and AIR/ACE merged HEGIS file analysis.

Table 4.3 displays the distribution of institutions according to instructional expenditures per student. Also shown are the distributions for institutions outside the counties included in SMSAs (Standard Metropolitan Statistical Areas) designated "rural."

Table 4.3

Urban/Rural Distributions by Adjusted Instructional Expenditures

Public Four-Year Institutions

Adjusted instructional expenditures per student	less than $1200	$1200-1500	$1500-1800	more than $1800
Distribution of all four-year institutions (297)	32%	27%	19%	22%
Distribution of four-year rural institutions (149)	35%	33%	16%	16%

Public Two-Year Institutions

Adjusted instructional expenditures per student	less than $800	$800-1000	$1000-1200	more than $1200
Distribution of all two-year institutions (578)	25%	30%	20%	25%
Distribution of all two-year rural institutions (272)	21%	25%	22%	32%

A statistical test to determine if rural institutions predominate in either the top two or bottom two cost categories shows that they do not. Being located in a rural county does not seem to predestine a public college either to affluence or poverty.

The range of adjusted instructional expenditures per student by Carnegie Classification is shown in Table 4.4.

Table 4.4

Distribution of Institutions by Carnegie Classification

Adjusted instructional expenditures per student	less than $1200	$1200-1500	$1500-1800	more than $1800
Research universities I (21)	0%	5%	5%	90%
Research universities II (26)	4%	19%	31%	46%
Doctorate-granting univs. I (28)	7%	21%	36%	36%
Doctorate-granting univs. II (15)	13%	27%	40%	20%
Comprehensive univs. and colleges I (140)	44%	35%	15%	6%
Comprehensive univs. and colleges II (56)	43%	25%	16%	16%

Source: AIR/ACE merged HEGIS file analysis.

Apparently, being more "comprehensive" (comprehensive I rather than comprehensive II) is not necessarily reflected in the costliness of the program. Similarly, institutions that offer degrees in more fields (doctorate-granting I rather than II) are also not necessarily more costly.

Once again, the question of what is "fiscal difficulty" for public colleges and universities comes full circle. "Research universities II" in the lower categories may be under particular stress by trying to live up to the reputation of being a research university while apparently expending relatively little on instruction per student. Comprehensive universities and colleges may be in more trouble, because a majority of those institutions are in the lower categories. However, they are clearly not designed to offer the breadth of education of the research and doctorate-granting institutions. Their relatively low costs per student may not be signs of financial difficulty. Nevertheless, a large number of comprehensive institutions appear to be spending more on instruction per student. Comparisons of institutions in the two spending categories leads to the conclusion that the lower-category institutions are struggling harder to provide quality programs.

Adjusted Reserve Position (Independent Institutions)

Based on the adjusted reserve position, institutions were divided into four categories: 1) those having less than a negative 20% of E & G expenditures in the adjusted reserve position (this indicates an accumulation of deficits and an excess of liabilities over assets in excess of 20% of a year's total E & G expenditures in the current fund); 2) those having between negative 20% and 0% in adjusted reserve position; 3) those having between 0% and 20% in adjusted reserve; and 4) those having greater than 20% in adjusted reserves. Institutions with large amounts of negative reserves are considered to be in the worst financial condition. They are the least able to withstand revenue or expenditure setbacks and have the lowest "survival probability" of all institutions.

Table 4.5

Distribution of Independent Institutions by Adjusted Reserve Position

Adjusted reserve position	less than -20%	-20% to 0%	0% to 20%	more than 20%
All independent institutions (1078)	16%	19%	34%	30%
Universities (64)	3%	11%	52%	34%
Four-year (849)	17%	21%	33%	29%
Two-year (165)	15%	24%	30%	30%

Table 4.5 uses the NCES categories for institutions: university, four-year, and two-year. Universities have the fewest institutions in the lowest reserve categories. Four-year and two-year institutions have similar distributions. As might be expected, larger universities that are older than 20 years appear, on the basis of this measure, to be more stable and more prepared for the future.

Figure 4.6 shows the distribution of institutions in the lower two categories by state. Of those states with more than four independent institutions, Vermont (71%), Kansas (71%), California (67%), Colorado (67%), Kentucky (65%), Rhode Island (57%), Missouri (56%), and Wisconsin (55%) show more than one-half their independent institutions with less than 0% adjusted reserve positions. In addition, exactly one-half of the institutions in New Mexico, New Hampshire, Delaware, and Maine are in this category.

Figure 4.6

Percentage of Independent Institutions with Limited Financial Reserves
(Adjusted reserve position less than 0, 1978)

National N = 1064, 37%

Source: NCES financial data

The implications for state policy are not clear. While the states above do not have strong direct assistance programs to independent colleges as do Pennsylvania and Maryland, they have not been particularly hostile (California and Vermont, for instance, have state aid programs that assist students at independent institutions). The pattern of "problem states" is not regional, nor is it tied to projected enrollment difficulties.

An examination of the health of institutions by their denominational affiliations may shed more light on this subject. Table 4.7 lists the proportions of institutions in the four categories by selected, major affiliations.

Table 4.7

Distribution of Independent Institutions by Adjusted Reserve Position (By Affiliations)

Adjusted reserve position	less than -20%	-20% to 0%	0% to 20%	more than 20%
Independent (494)	17%	20%	30%	33%
Roman Catholic (177)	15%	23%	43%	19%
United Methodist (83)	16%	7%	41%	36%
United Church of Christ (76)	18%	27%	36%	18%
Southern Baptist (44)	7%	20%	27%	45%
American Baptist (24)	25%	17%	29%	29%
United Presbyterian (24)	17%	21%	8%	54%
Presbyterian, U.S. (21)	19%	14%	14%	52%
Lutheran -- Missouri Synod (12)	17%	17%	58%	8%

Source: AIR/ACE merged HEGIS file analysis.

Roman Catholic colleges do not appear as weak as they are sometimes characterized. They have fewer institutions in the group with high adjusted reserve levels, but they have a smaller proportion in the lower

levels than do other groups of institutions. Several of the denominations have a majority of their institutions with adjusted reserve positions above zero. Of the larger affiliation groups, the American Baptist has perhaps the largest proportion of institutions in the category of adjusted reserves below -20% of E & G expenditures.

An attempt was made to determine if institutions in rural (non-SMSA) counties were more likely to be in the negative adjusted reserves category. The results were not statistically significant. On the basis of 1978 data, institutions in rural areas are not any more likely to be without reserves.

Table 4.8 shows the distribution of enrollments by financial condition categories.

Table 4.8

Distribution of Headcount Students by Adjusted Reserve Position of the Institutions They Attend

Adjusted reserve position	less than -20%	-20% to 0%	0% to 20%	more than 20%
Total headcount enrollment (2,173,785)	6.9%	19.7%	41.0%	32.4%
Black student enrollment (181,809)	11.6%	23.2%	38.4%	26.8%
Hispanic student enrollment (203,005)	5.0%	27.9%	40.2%	26.9%
Black and Hispanic enrollment (384,814)	8.1%	25.6%	39.4%	26.9%

Source: AIR/ACE merged HEGIS file analysis.

Only 6.9% of all students in independent higher education are in the institutions facing the most difficulty (for black students this number is 11.6%). Those institutions are the ones most likely to require extraordinary effort to prevent closings should further difficulties in enrollment or cost control arise.

Approximately 150,000 students attend independent institutions that are in the most financial difficulty, as defined by the -20% adjusted

reserve position criterion. Those 150,000 students represent slightly more than 1% of the total student population in higher education. If all 172 institutions with adjusted reserve positions below -20% failed in the next 10 years, only 1% of total enrollments would have to be redistributed. This should not be taken as a prediction that those institutions will fail. The site visits have shown that since 1978, when these data were collected, many of those institutions have "turned around" but still have the greatest probability of future difficulty.

Further, the data show that approximately 31,000 minority students attend institutions in the lowest category of financial condition. There are 12 predominately black, independent institutions in the adjusted reserve position category below -20%. The other categories are filled as follows:

Table 4.9

Number of Predominantly Black Independent Colleges by Adjusted Reserve Position

Adjusted reserve position	less than -20%	-20% to 0%	0% to 20%	more than 20%
Number of predominately black independent institutions	12	18	19	15

The distribution of black colleges appears relatively even. The question of determining appropriate policy toward institutions with financial difficulty seems to be a regional one: is this particular "ailing" college fulfilling a critical regional need? The total number of students attending colleges in the most difficulty is small. Black and Hispanic students are not faced with a serious loss of access and choice.

Table 4.10 expands on the national data collected by HEGIS. The sample collected in the CIRP study is once again biased toward the more affluent institutions. Nevertheless, some relative effects can be detected.

Black and low-income students are more likely to attend institutions with financial difficulty. The HEGIS data show, however, that the majority of those students appear to be in institutions with a more certain future. Students with limited institutional choices (i.e., students not accepted elsewhere and wishing to attend institutions near home) are only somewhat more likely to attend institutions in difficulty.

Table 4.10

Distribution of Types of Freshman in Independent Institutions
By Adjusted Reserve Position

Adjusted reserve position	less than -20%	-20% to 0%	0% to 20%	more than 20%
Freshman respondents	5.5%	12.8%	35.9%	45.8%
Black freshmen	10.4%	25.4%	29.9%	34.3%
White freshmen	5.1%	11.6%	36.2%	47.0%
Nonwhite freshmen	8.3%	20.5%	32.8%	38.4%
Freshmen with parental income < $6,000	8.5%	22.1%	34.4%	34.9%
Freshmen with parental income < $12,500	8.2%	19.1%	37.0%	35.8%
Handicapped freshmen	5.6%	14.5%	33.9%	46.1%
Freshmen not accepted anywhere else	4.6%	13.8%	36.6%	44.9%
Freshmen wishing to live at home	8.0%	12.7%	47.1%	32.3%
Freshmen with BEOGs above $1,500	7.6%	19.0%	35.3%	38.1%
Freshmen living less than 5 miles from home	6.5%	14.6%	46.1%	32.8%

Source: ACE/Cooperative Institutional Research Program, Freshman Survey, Fall 1979, and AIR/ACE merged HEGIS file analysis.

Table 4.11 is based on another sample taken by the National Institute of Independent Colleges and Universities. Once again the sample seems biased toward the more affluent institutions, and NIICU has gathered data only on aid recipients from those institutions. The conclusions that can be drawn from this table parallel those from the previous two tables--black and more needy students are somewhat more likely to attend institutions with negative reserve positions. The fact that the students

are more needy is clear because those institutions draw somewhat more than their share of BEOG, SEOG, and NDSL monies. Their infrequent use of CWSP (College Work-Study Program) funds may indicate an inability to use students effectively in campus employment. The last two lines of Table 4.11 are interesting: institutions with lower reserves are smaller (i.e., have fewer aid recipients) and have lower tuitions consistent with the findings.

Table 4.11

Distribution of Aid Recipients and Aid Dollars in Independent Colleges by Adjusted Reserve Position

Adjusted reserve position	less than -20%	-20% to 0%	0% to 20%	more than 20%
Institutions in NIICU Data Base	11%	16%	41%	32%
Financial aid recipients	4%	8%	58%	24%
Financial aid recipients - black	7%	12%	57%	25%
Financial aid recipients - white	5%	8%	56%	31%
Total awards - Pell Grants (BEOG)	6%	10%	60%	24%
Total awards - SEOG	5%	7%	54%	34%
Total awards - NDSL	6%	7%	59%	29%
Total awards - CW-SP	3%	7%	59%	32%
Average number of aid recipients per institution	512	589	1769	1149
Average tuition	$3016	$2830	$3297	$4012

Source: National Institute of Independent Colleges and Universities Student Aid Recipient Data Base, 1980-81, and AIR/ACE merged HEGIS file analysis.

The Competitive Environment of Independent, Four-Year Colleges with Low Financial Reserves

To assess the impact of institutional financial condition on national higher education goals, it is important to answer the following question: "Are the institutions that are in trouble simply the ones facing the most competition?" The implication of the question is that those institutions exist on the margin because of duplication by other institutions. However, colleges differentiate themselves in many ways, and the question is difficult to answer.

Herein, only the geographic aspect of competition is examined. The purpose is to show the placement of financially troubled colleges relative to other colleges in the country.

The first step defines rough geographic markets as collections of independent, four-year colleges in contiguous counties or as groups of colleges in areas no larger than four counties with no colleges in surrounding contiguous counties. In a few cases, mostly in large metropolitan areas, there were no distinct breaks between groups of colleges for more than four counties; the entire area was called a market but was analyzed as a group of submarkets.

This is a simplification. A single market might contain an institution with a local reputation, one with a national reputation and one that enrolls 90% of its students from a particular religion. In most senses, these institutions are not in "competition" yet are in the same market. For that reason the conclusions of the following analysis are very conservative. The major concern is with situations where the only institution in a market or a large proportion of the institutions is in financial difficulty.

Another limitation of this analysis is that public colleges are not treated, though most of the markets examined include one or more such institutions. Because the major concern regarding the closing of independent colleges is not the loss of opportunity so much as the loss of reasonable choice, public colleges have not been included here.

The distribution of independent, four-year colleges across the country led to the identification of 192 markets containing 823 institutions, of which 144 had less than -20% in adjusted reserves in 1978. (Of those 144, 10 have already closed or merged.)

Of the 192 markets, 65 consisted of isolated colleges alone in their county and surrounded by counties without independent, four-year colleges. Ninety multiple-institution markets were distinct in that they were within a four-county region surrounded by counties with no other colleges. Thirty-seven markets were larger than four counties and could be considered only as collections of geographic submarkets.

Of the 65 single-institution markets, 12 had institutions with adjusted financial reserves below -20%. Of the multiple-institution distinct markets, 13 showed more than 50% of their institutions with adjusted financial reserves below -20%. Within the 37 large markets, there were four submarkets in which more than 50% of the institutions showed adjusted financial reserves below -20%. A total of 29 market areas appear to face the potential loss of a substantial proportion of their institutions. In addition, 42 market areas have more than one institution (but less than half of the total number in the area) with adjusted financial reserves below -20%.

Table 4.12 summarizes these counts. Of the 192 region markets, 71 (12 + 17 + 42) would see distinct change if the financial difficulties of the 144 troubled institutions forced closings at some point. In each of those 71 areas there would be fewer independent colleges or none at all. Colleges that may have been near many students' homes would be unavailable, and the net effect would be a reduction in choice. This analysis shows that not all independent, four-year colleges are located in geographic areas where other independent, four-year colleges exist to take up the slack.

Table 4.12

Market Areas with Institutions Having Less than -20% in Adjusted Financial Reserves

	Isolated College Market	Distinct Area with Multiple Colleges	Large Area Divided into Submarket	Total
Total Markets:	65	90	37	192
Number with all institutions in difficulty	12	--	--	12
Number with more than one-half the institutions in difficulty	--	13	4 (submarkets)	17
Number with more than one, but less than one-half, in difficulty	--	21	21	42

Small College Difficulties

Introduction

Many small colleges may have difficulty designing cost structures commensurate with the number of students enrolled. The greater degree of financial problems among small colleges may be a function of the demands of their special missions, including lower tuitions and greater personal contact with students. Furthermore, the tendency of many of the most efficient and successful colleges is simply to grow larger, leaving in the smaller size categories a great number of troubled institutions. Small, independent colleges also appear to be more susceptible to enrollment fluctuations than larger institutions.

Indicator Correlations with Enrollments

The merged HEGIS file data allows contrasting of full-time equivalent enrollment and other financial condition indicators. Table 4.13 shows that few indicators correlate with size in the public sector.

Table 4.13

Correlation Coefficients Between Larger FTE Enrollments and Other Financial Indicators for Public Institutions, 1978

	Significant Correlation Coefficients
Public universities	None
Public four-year colleges	
Higher instruction budget proportion	.21
Public two-year colleges	
Higher appropriation dependence	.13
Lower tuition revenue per FTE student	-.15
Lower E&G expenditures per FTE student	-.17
Higher proportion of part-time students	.26

Source: AIR/ACE merged HEGIS file analysis.

Large public, four-year colleges may have been able to reduce their overhead burden somewhat. Large public, two-year colleges appear more urban, with greater public support and more part-time students.

The effects of size were noted only for four-year colleges among independent institutions, but the associations are quite extensive. Table 4.14 lists correlation coefficients between increasing size and other financial indicators for 1978 and indicates that small, independent, four-year colleges have a higher probability of charging lower tuitions, spending proportionately more on overhead, having lower reserves, and being relatively more burdened with plant debt.

Table 4.14

Correlation Coefficients Between FTE Enrollment and Other Financial Condition Indicators for 1978 for Four-Year Independent Colleges

Larger FTE enrollments correlate with:	Correlation Coefficient
1. High tuition dependence	.33
2. Higher tuitions per student	.09
3. Low gift dependence	-.33
4. High proportion of part-time students	.11
5. Low E&G expenditures per student	-.11
6. More FTE students per full-time faculty	.21
7. High instruction budget proportion	.25
8. Low institutional support budget proportion	-.18
9. Low O&M budget proportion	-.13
10. High ratio of unrestricted current fund balance to current fund expenditures	.11
11. Lower ratio of plant debt to current fund revenues	-.10

Source: AIR/ACE merged HEGIS file analysis.

The Financial Condition of Small Independent Colleges

Data collected by NCES for the fiscal years ending in 1976, 1977, and 1978 permit some conclusions about the relationship between size and financial stability (using the criterion of the existence of financial reserves).

A lack of reserves was operationally identified for use in Figure 4.15 whenever an institution had both a negative current fund balance and an insignificant endowment balance (compared to its current fund balance deficit). Twenty-eight percent of the 876 independent, four-year colleges did not have those reserves in 1978. Eighteen four-year colleges were not included in the analysis because of unusually high or unusually low per-student expenditures, although data for those colleges were provided by NCES (for example, a college for the deaf was excluded because of its higher per-student expenditures). The 28% without reserves had greater current fund liabilities than current fund assets and were without significant compensating balances in their endowment funds.

Figure 4.15 shows the distribution of schools without financial reserves* by size categories for fiscal years ending in 1976, 1977, and 1978. The figure shows a discontinuity in student body populations of between 800 and 1,000 FTE undergraduates. For the fiscal year ending in 1978, 33% of schools with FTE below 1,000 had no financial reserves, while only 18% of the schools above 1,000 FTE had no financial reserves; in 1976, the percentages were 37 and 18, respectively. Large enrollments are no guarantee of financial stability--three schools with enrollments greater than 4,000 had no financial reserves.

The figure supports the conventional wisdom that small colleges face significant financial difficulties, especially when compared to large institutions.

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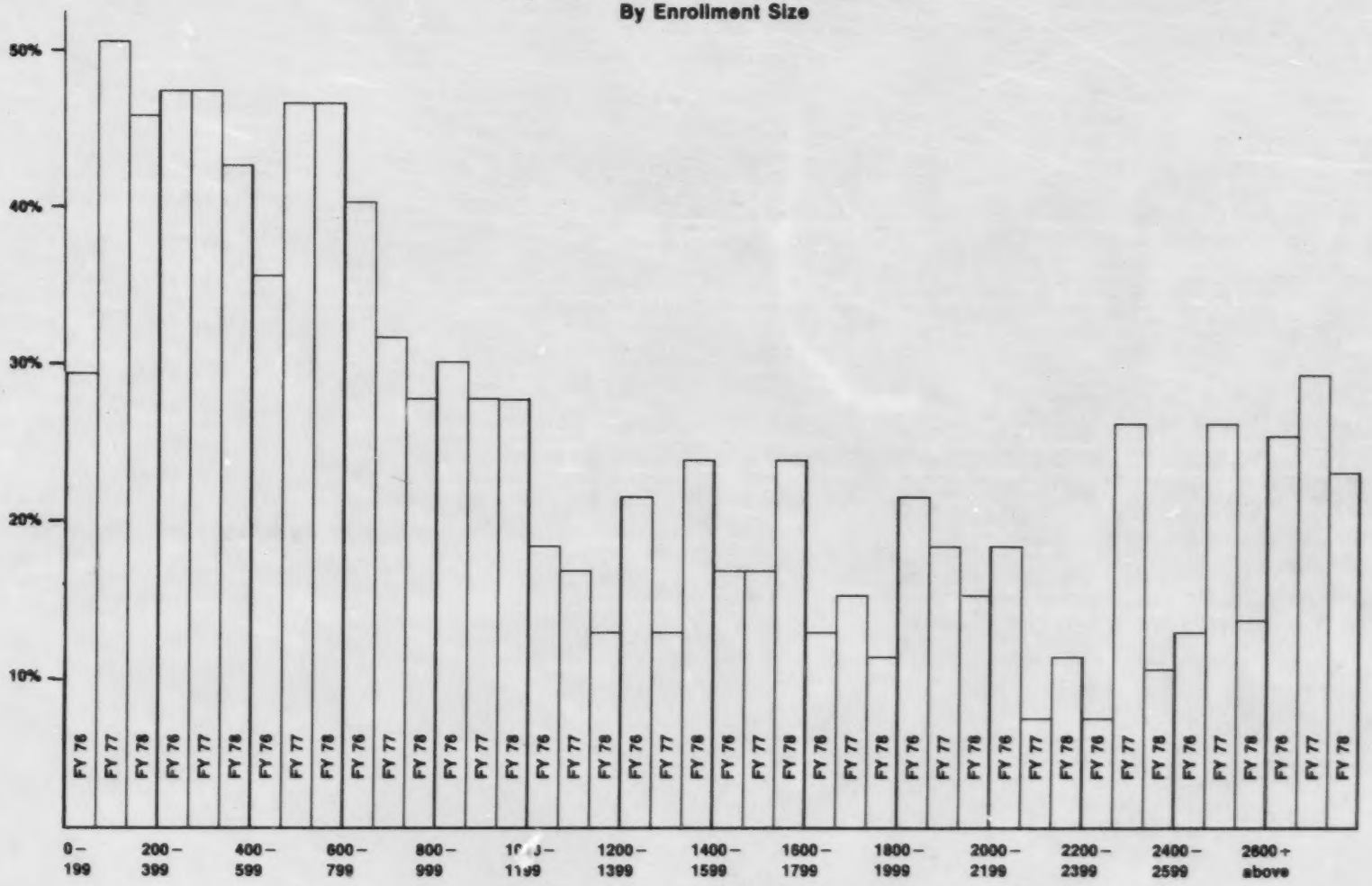
*For this analysis, any school that had more than the equivalent of one-half year's expenditures in its endowment in excess of its (negative) current fund balance was classified in the "with reserves" category. If the sum of the endowment fund balance and the current fund balance did not exceed the equivalent of one-half year's expenditures and the current fund balance was negative, the institution was classified in the "without reserves" category.

Figure 4.15

Proportion of Institutions Without Reserves*
By Enrollment Size



FTE Undergraduate Enrollment
(Three years of reserve information are given for each size category.)

Source: NCES financial data for fiscal years ending 1976, 1977, and 1978.

* "Without reserves" is defined as a negative current fund balance, unless the sum of the endowment and current fund balances exceeds one-half of yearly educational and general expenditures.

The Economies-of-Scale Rationale

Several arguments are commonly advanced to support the hypothesis, advanced by the Carnegie Commission in 1971, that fixed costs are the major difficulty undermining small colleges. The classic reference in those arguments is to the president: an institution, no matter how small, still needs a president. A second argument is that increasing size may mean that classes once half full could now be filled and that the additional students would pay for faculty costs. A third argument, derived from both of the above, is that a certain minimum presence of talent is needed on campus. There must be one president, one person who can manage fiscal affairs, and one person familiar with federal financial aid reporting requirements. Both small and large institutions must maintain this minimum level of talent. Obviously, students become less burdensome when there are more of them to absorb fixed costs.

The arguments above, however, are slightly flawed. Although it is true that all institutions have only one president, the size of the president's staff and even of the president's salary tends to increase with increases in the size of the institution. In fact, the complexities of a large organization may force the president's budget to grow faster than the college overall.

The second argument concerns class size. Though having more students increases the probability of being able to fill courses, increased college size may mean more to the outcome of negotiations between faculty and administration on the number and type of courses to be offered and on minimum class sizes.

The third argument has somewhat more merit. Institutions do require certain minimum levels of talent, though the true minimum may be so small that a college of any size may be able to support the few people involved. At the smallest colleges it is possible to "double up" some talents (e.g., business officers may participate in the filing of federal financial aid reporting forms and writing specialists may also teach literature).

Small colleges do spend more of their budgets on administation. For the fiscal year ending 1978, NCES data show that independent, four-year colleges under 800 FTE in enrollment spent an average of 64.3% of their budgets on noninstruction areas (auxiliaries and restricted scholarships were excluded from these calculations), while independent, four-year colleges over 800 FTE in enrollment spent only an average of 57.4% of their budgets on noninstruction areas. Thus, while sharing duties may be possible, the need for specialization in areas such as admissions, fund raising, and financial aid has put pressure on institutions to upgrade those administrative areas. In the fiscal year ending 1975, the proportion of noninstructional expense was less for both small and large institutions. For colleges under 800 FTE enrollment, the proportion was 61.7%; for colleges over 800 it was 56.7%. The implication is that some minimum of administrative talent is needed, and this minimum is increasing as greater administrative effort is required to secure enrollments, attract gifts, and stay current with financial aid regulations.

The Carnegie Commission attempted to establish a minimum size for colleges based on cost data. Figure 4.16 presents a diagram similar to the ones presented by the Carnegie Commission in 1971. Based on data collected by NCES for 1978, the figure shows educational and general expenditures per student as a function of total full-time equivalent enrollment (defined as the sum of the number of full-time students plus one-third the number of part-time students enrolled in fall 1977). All institutions classified by the Carnegie Commission as private liberal arts are shown (N = 568)*. An inverse function curve can be fitted to the points with a reasonable amount of accuracy ($R = .66$; $p < .001$). The curve shows a precipitous drop in cost per student as enrollments rise. Institutions that had fall 1977 enrollments 5% or more below fall 1974 enrollment are circled so as to highlight the special problem of adjusting to a smaller size. (Circling was not attempted where the points are most dense; all institutions outside the dense area and showing declines are noted; slashes indicate that where two schools overlap on the plot, as in "B," one of the schools registered an enrollment decline.) A number of schools with declines also show high educational and general expenditures per student.

The reasonableness of fit for the curve in Figure 4.16 depends heavily on the 10 institutions in the square labeled A. If those 10 institutions are removed from the analysis, it would be much more difficult to contend that larger size allows lower costs per student. With the 10 cases excluded, the regression line would be flat at the mean of about $4,500 per student.

The Carnegie Commission analysis (redone for the year 1978) rests on the very high costs per student of 10 institutions, five of which lost enrollment between 1975 and 1978. The high costs for those five institutions could easily be a result of the inability to adjust to the decline. With those institutions removed, the scatter above and below the mean is relatively independent of size.

Finally, if a number of truly irreducible fixed costs do exist for higher education institutions, then how can 144 independent, four-year colleges with enrollments under 600 still have financial reserves (using fiscal year 1978 data, for example)? The fact that some institutions can build reserves, though they may have very low enrollments, means that large, truly intractable fixed costs may not exist for all institutions.

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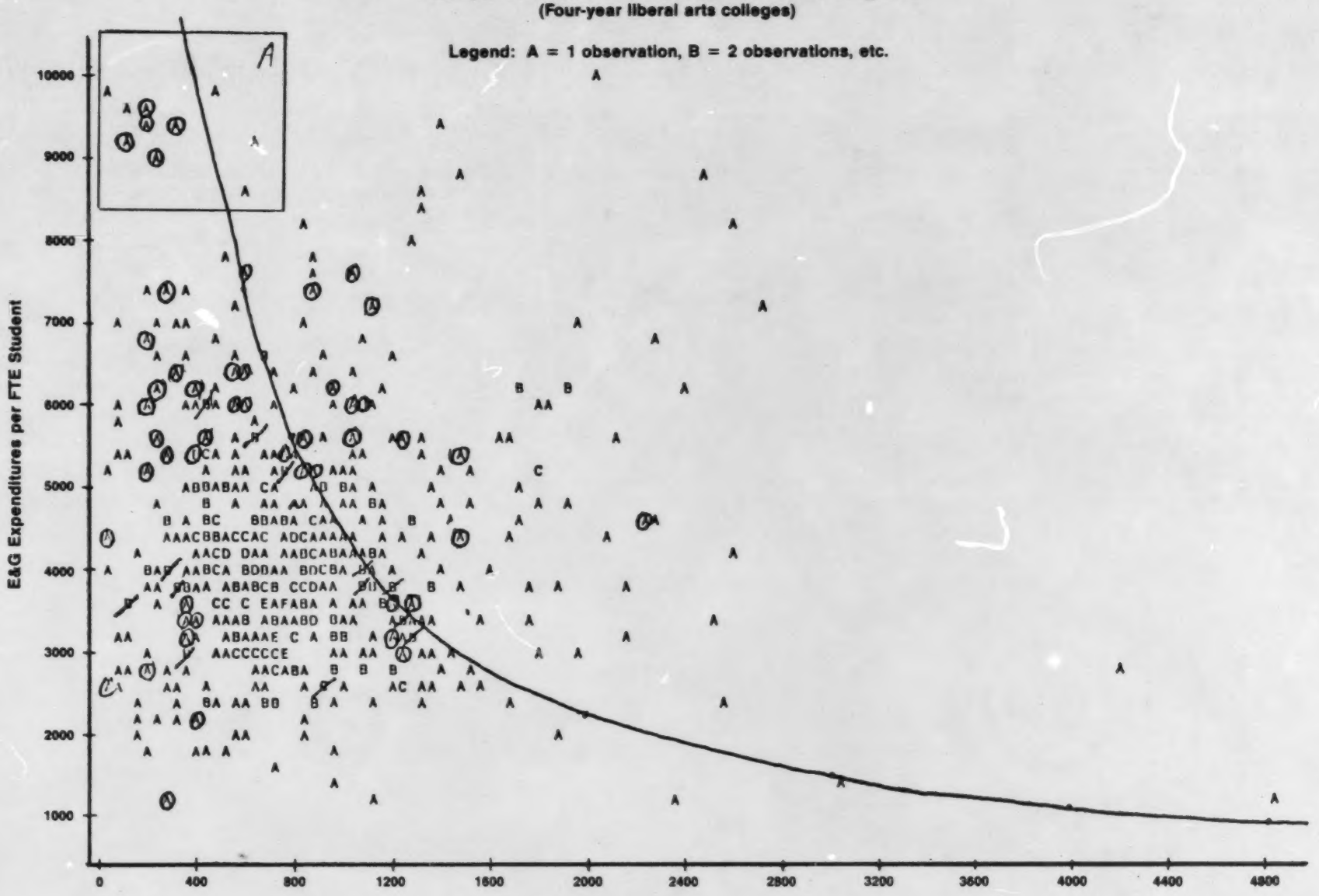
*Ten institutions with educational and general expenditures per student either above $10,000 or below $1,000 were excluded.

Figure 4.16

Costs per Student vs. Enrollment for Fiscal Year Ending 1978
(Four-year liberal arts colleges)

Legend: A = 1 observation, B = 2 observations, etc.



Source: NCES financial and enrollment data.

The Impact of Enrollment Fluctuations

Figure 4.17 illustrates the relationship between changes in enrollment and changes in costs per student. Four years of enrollment data and four years of educational and general expenditures per student were used (for fiscal years ending 1975, 1976, 1977, and 1978 for four-year, independent liberal arts colleges). For each college a regression line was fitted to the four points for each variable, and the slopes of those lines were taken as indicators of change in enrollment and change in costs per student. Thus, the figure shows the dependence of changes in educational and general expenditures per student on the average percentage change in enrollment from fall 1974 to fall 1978.

Figure 4.17 also shows that declines in enrollment lead to increases in costs per student and that increases in enrollment lead to decreases in those costs. The steep regression line fits the data satisfactorily ($R = .35$; $p < .001$). The plot indicates that a decline in enrollments of 10% per year can increase educational and general expenditures by $193 per student above the average cost increase for those institutions with no decline. The effect of inflation is noticeable in the plot because institutions with no change in enrollment have an average per student cost increase of $272.

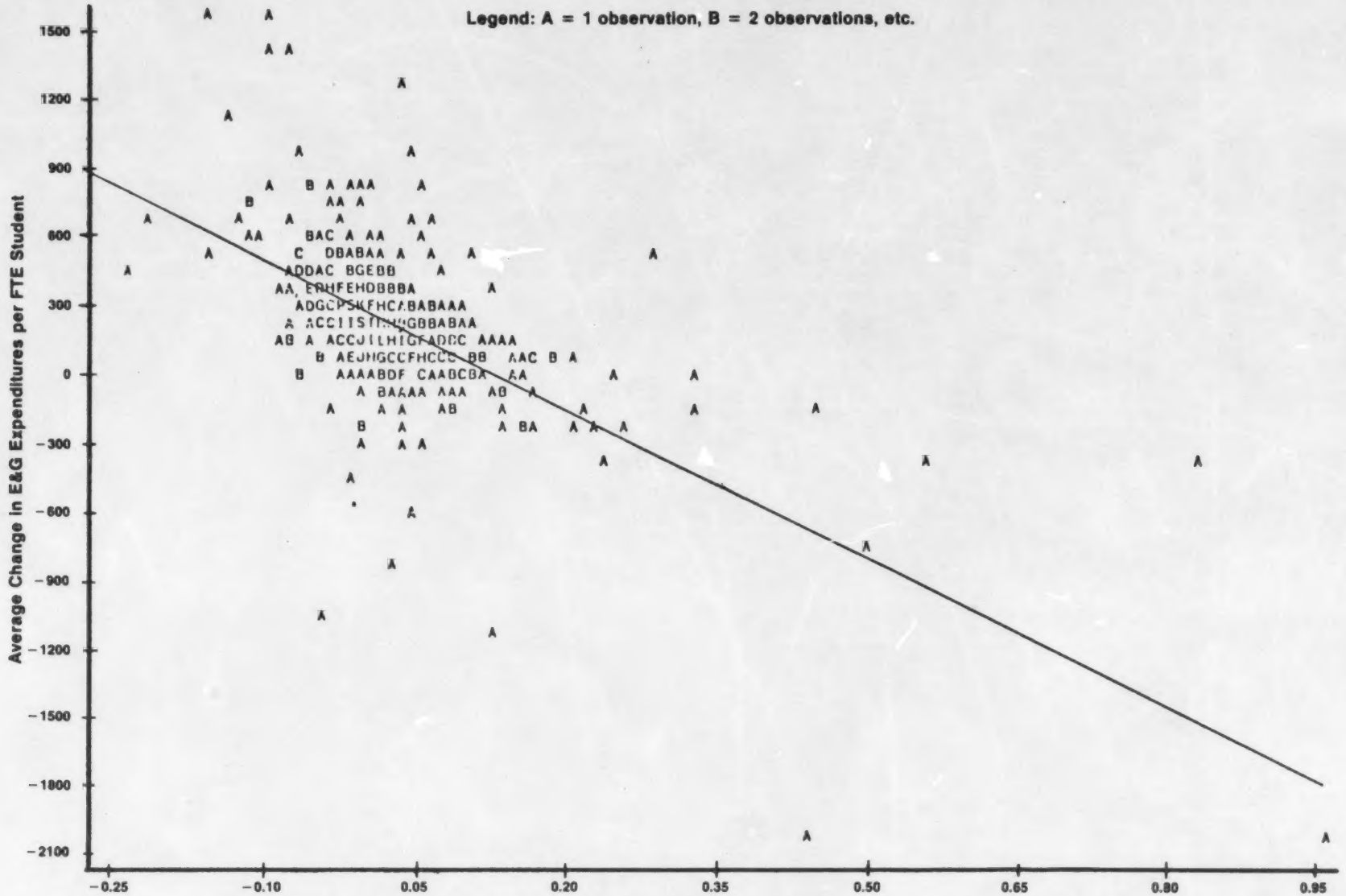
The proportion of small colleges that have suffered enrollment declines in the last 10 years is relatively great. In the fall of 1979, only 35% of independent, four-year colleges with enrollments below 800 were within 5% of the highest enrollment level they had attained in the 1970-79 period. Fifty-five percent of independent, four-year colleges with enrollments over 800 were within 5% of their 1970-79 peak or were at the peak.

On the other hand, 33% of the small colleges were more than 25% below their 1970-79 enrollment peak, while only 15% of large colleges were 25% or more below their peak. Adjusting costs may be more of a problem for small colleges than true fixed costs.

Small colleges also tend to charge lower net tuitions than large colleges. (Net tuition per student is calculated by subtracting unrestricted scholarships from total tuition revenues and dividing by the full-time equivalent number of students.) In 1978, independent, four-year colleges with fewer than 800 FTE students received an average of $2,046 in net tuition per student; the large colleges received $2,483.

Figure 4.17

Change in E&G Expenditures per FTE Student vs. Change in Enrollment for Fiscal Years Ending 1975–78
(Four-year liberal arts colleges)



Source: NCES financial and enrollment data.

Growth of the "Fittest"

The application of Social Darwinism to explain the predominance of small institutions in the category of "financially troubled" depends on the acceptance of a few cultural axioms. First, if an enterprise is succeeding (especially an educational enterprise where success means proficiency at attracting and graduating students who proceed to earn large amounts of money and then donate a portion of it to the institution), then the enterprise will tend to grow. Second, most faculty prefer a slightly larger institution.

The import of this tendency toward growth is that successful organizations are expected to be larger--not because it is financially more sound to be larger, but because larger is what organizations want to be. Less successful organizations either do not grow or they shrink.

This theory relates well to the data. The existence of small, financially well-prepared institutions would be expected because they apparently value their small size and have chosen not to grow in spite of their "success." The break in the proportion of colleges with reserves and with enrollments from 800 to 1,000 may be explained by the effect of reaching a level of expectation--faculty stop pressing for further growth when enrollment reaches 1,000. At this point, department sizes may be deemed by faculty to be adequate, and many successful colleges stop growing. Thus the proportion of colleges with reserves and with enrollments above 1,000 increases.

Small institutions may simply be those that are unwilling or unable to grow. In small institutions, costs per student are not expected to be that much greater than in larger organizations (except in a few cases), for the reasons cited above (enrollment decline, special mission, a small amount of fixed costs). On the other hand, many small colleges simply have not entered the education market in a way that allows growth. Demand is unsteady and the problems of charging adequate tuition to cover normal costs without causing further erosion of enrollment are as difficult, if not more difficult, than coping with expenditures. The Carnegie data and Figure 4.3 show that in fact most small colleges have costs per student within a normal range (compared with larger colleges). What the data do not show is the difficulty that many small colleges have in generating adequate revenue to cover those costs.

Glossary

The following words, phrases, abbreviations, and acronyms appear throughout this report. The definitions are based on common usage and general acceptance.

ACE	American Council on Education.
AIR	American Institutes for Research.
Assets	Cash, accounts receivable, notes receivable, investments, amounts due from other fund groups.
BEOG	Basic Educational Opportunity Grant (now called Pell grant). A source of federal student aid that provides eligible undergraduate students with a base amount of financial aid to help defray the cost of postsecondary education. Grant limitations are subject to change as leglislation is revised.
CIRP	Cooperative Institutional Research Program. A national longitudinal study of the American higher educational system. The annual CIRP survey of entering freshmen was first undertaken in 1966. The purpose is to provide a normative picture of college freshmen for policy analysts, parents, and students.
Current fund	Resources to be used for current operating purposes.
Current fund balance	Includes allocations by operating management, budget balances brought forward from prior fiscal periods, and the unallocated balance.
CW-SP	College Work-Study Program. A federal program to provide grants to institutions for partial reimbursement of wages paid to students. The program promotes part-time employment for students with great financial need in eligible institutions of higher education.

E & G	Educational and general. Refers to the operating budget of the institution, excluding dormitories, dining halls, and other auxiliary enterprises.
FTE	Full-time equivalent. The amount of time considered the standard or institutionally agreed upon amount for employees or faculty during a given period. For students it is generally computed as full-time students plus one-third of part-time students.
HEGIS	Higher Education General Information Survey. First undertaken by the National Center for Education Statistics (NCES) for the purpose of providing statistics on educational institutions and to supply data to the Congress and the public.
HEPI	Higher Education Price Index.
HEP	Higher Education Panel. A survey research program established by the American Council on Education for the purpose of obtaining policy-related information from representative samples of colleges and universities.
Independent	Used interchangeably with the term private. Indicates a nonpublic institution.
Institutions	All types of colleges and universities in higher education.
Liabilities	Accounts and notes payable, accrued liabilities, deposits, amounts due to other fund groups, and deferred credits.
Mandatory transfers	Legally binding transfers of restricted or unrestricted funds from the current funds group to other funds for the financing of the educational plant; grants agreements with the federal government, donors, or others to match gifts and grants to loan and other funds.
NACUBO	National Association of College and University Business Officers.
NCES	National Center for Education Statistics.
NDSL	National Direct Student Loan Program. Federal government assists in the establishment of funds at institutions of higher education by making low-interest loans to graduate and undergraduate students.

NIICU	National Institute for Independent Colleges and Universities.
O & M	Operation and maintenance. The budget for physical plant operation and maintenance.
Private	Used interchangeably with the term independent. Indicates a nonpublic institution.
Quasi-endowment funds	Funds that the governing board has decided to retain and invest (i.e., funds functioning as endowment).
Real revenue change	The revenue change after deflation by the Higher Education Price Index.
Restricted funds	Funds limited by donors and government agencies to specific purposes, programs, departments, or schools.
SEOG	Supplemental Education Opportunity Grant. A federal grant that provides financial assistance to students with exceptional financial need, enabling them to attend college. Grant limitations are subject to change as legislation is revised.
Small colleges	Colleges with an FTE enrollment less than 1,000.
SMSA	Standard Metropolitan Statistical Area.
Stopouts	Those students who leave an institution of higher education for a period of time with the intention of returning.
Two-year college	A community or junior college.
University	Differentiated from four-year colleges by the volume of research performed. A university is a complex institution of higher education in which the following activities take place: instruction beyond the bachelor's level, research, and services.

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